

## System and Rapidity dependence of Baryon/Meson ratios at RHIC

Eun-Joo Kim  
University of Kansas  
for the **BRAHMS** collaboration

The observed increase at intermediate  $p_T$  in the  $p/\pi^+$  and  $\bar{p}/\pi^-$  ratios at RHIC [1] is suggestive of new physics. Alternative models that attempt to describe these ratios include a phase-space determined quark coalescence picture [2,3], and the dynamics driven models as recombination [4] and baryon-junction transport [5]. Central Au+Au collisions are expected to provide a partonic medium where the coalescence of soft partons can occur. Coalescence will depend on the system size of the partonic fluid and is expected to be less influential for the Cu+Cu system. In this process, the  $p/\pi$  ratios can provide important information on dynamics how the medium evolves longitudinally. We will present rapidity dependent baryon/meson ratios in  $0 < y < 3$  from Au+Au, Cu+Cu collisions at  $\sqrt{s_{NN}} = 62$  GeV and 200 GeV.

- [1] S.S. Adler *et al.*, PHENIX Collaboration, Phys. Rev. Lett. **91** (2003) 172301.
- [2] V. Greco, C. M. Ko and P. Lévai, Phys. Rev. Lett. **90** (2003) 202302.
- [3] V. Greco, C. M. Ko and I. Vitev, Phys. Rev. **C71** (2005) 041901(R).
- [4] R. C. Hwa and C. B. Yang, Phys. Rev. **C70** (2004) 024905.
- [5] I. Vitev and M. Gyulassy, Nucl. Phys. **A715** (2003) 779c.